

a certain proposition is, in part, a causal question, although, of course, the question of what the correct analysis is of "S knows that *p*" is not a causal question.

## NOTES

1. "Is Justified True Belief Knowledge?" *Analysis*, XXIII.6, ns 96 (June 1963): 121–123. [pp. 4–5 in this volume. Ed.] New analyses have been proposed by Michael Clark, "Knowledge and Grounds: A Comment on Mr. Gettier's Paper," *Analysis*, XXIV.2, ns 98 (December 1963): 46–48; Ernest Sosa, "The Analysis of 'Knowledge That P,'" *Analysis*, XXV.1, ns 103 (October 1964): 1–3; and Keith Lehrer, "Knowledge, Truth, and Evidence," *Analysis*, XXV.5, ns 105 (April 1965): 168–175. An outline of a causal theory of knowing appears in Robert Binkley, "A Theory of Practical Reason," *The Philosophical Review*, LXXIV.4, ns 412 (October 1965): 423–448 (cf. pp. 432–435).

2. *Op. cit.* Criticisms of Clark's analysis will be discussed below.

3. Grice, "The Causal Theory of Perception," *Proceedings of the Aristotelian Society*, Supp. Vol. XXXV (1961).

4. If a laser photograph (hologram) is illuminated by light waves, especially waves from a laser, the effect of the hologram on the viewer is exactly as if the object were being seen. It preserves three-dimensionality completely, and even gives appropriate parallax effects as the viewer moves relative to it. Cf. E. N. Leith and J. Upatnieks, "Photography by Laser," *Scientific American*, CCXII, 6 (June 1965): 24.

5. For further defense of this kind of procedure, with attention to perception, cf. Grice, *op. cit.* A detailed causal analysis of remembering is presented by C. B.

Martin and Max Deutscher, "Remembering," *The Philosophical Review*, LXXV.2, ns 414 (April 1966): 161–196.

6. Causal connections can hold between states of affairs, such as believings, as well as between events. If a given event or state, in conjunction with other events or states, "leads to" or "results in" another event or state (or the same state obtaining at a later time), it will be called a "cause" of the latter. I shall also speak of "facts" being causes.

7. A fact can be a cause of a belief even if it does not *initiate* the belief. Suppose I believe that there is a lake in a certain locale, this belief having started in a manner quite unconnected with the existence of the lake. Continuing to have the belief, I go to the locale and perceive the lake. At this juncture, the existence of the lake becomes a cause of my believing that there is a lake there. This is analogous to a table top that is supported by four legs. When a fifth leg is inserted flush beneath the table top, it too becomes a cause of the table top's not falling. It has a causal role in the support of the table top even though, before it was inserted, the table top was adequately supported.

8. Clearly we cannot require someone to reconstruct every detail, since this would involve knowledge of minute physical phenomena, for example, of which ordinary people are unaware. On the other hand, it is difficult to give criteria to identify which details, in general, are "important." This will vary substantially from case to case.

9. "Mr. Clark's Definition of 'Knowledge,'" *Analysis*, XXV.1, ns 103 (October 1964): 8–9.

10. Perhaps background propositions that help warrant S's inference must be *known* by S, as well as true. This requirement could be added without making our analysis of "S knows that *p*" circular. For these propositions would not include *p*. In other words, the analysis of knowledge could be regarded as recursive.

11. This kind of case is drawn from an unpublished manuscript of Gilbert Harman.

## The Gettier Problem and the Analysis of Knowledge

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The problem that Edmund Gettier formulated is, I believe, still unsolved.<sup>1</sup> It has been explored and developed to such an extent that it is worthwhile stating just what the problem is. It is, in my opinion, the problem

of showing that a fallibilistic theory of epistemic justification is possible. For, the problem arises in certain cases in which a person is justified, whether he knows it or not, in believing or accepting some false proposition which transmits justification to some true proposition. Thus, for a Cartesian who held that epistemic justification must proceed from what is certain by certain steps to arrive at what is known, the problem would not arise. For a philosopher who avers, as I do, that epistemic justification is fallible, the problem is to articulate a theory of fallible epistemic justification which allows us to distinguish between those cases in which justification, though fallible, yields knowledge, and those in which some false proposition deprives one of obtaining knowledge from justification. I shall present an analysis of knowledge and theory of justification incorporating a fourth condition to solve the problem Gettier raised.

## 1. THE ANALYSIS OF KNOWLEDGE

To formulate my solution to the Gettier problem, I shall introduce some familiar notions which I shall use in a special way. On the analysis of knowledge I wish to defend, S knows that *h* if and only if (i) *h*, (ii) S accepts *h*, (iii) *h* is evident for S, and (iv) there is no false proposition *f* such that if *f* were doubtful for S, then *h* would not be evident for S. The terms of this definition are, in the first three conditions, taken from Chisholm, but I intend to use them in my own way.<sup>2</sup>

## 2. ACCEPTANCE AND BELIEF

Let us first consider acceptance. A person may accept something he believes, but he may also accept something he does not believe, and he may refuse to accept something he does believe. To accept a proposition in this context means to assent to it when one's only purpose is to assent to what is true and

to refuse to assent to what is false. What a person believes is not entirely up to him. One is endowed with certain beliefs, and one may conclude that some of what one believes one should not accept as a truth seeker. One person may find, for example, that he believes that someone is tenderly concerned about his welfare, but, looking at the evidence, conclude that this is probably not true. He wishes it to be so with such fervor that he cannot help but believe it nonetheless. Similarly, there may be something that is so distasteful for a second person to believe that he cannot do so, even though the person becomes aware that it is evidently true. In the quest for truth, the first person might refuse to assent to what he believes, and the second might assent to what he does not believe. In this way, acceptance may differ from belief.

This distinction is of some importance in judging whether a person knows, for philosophers have erroneously held a person who believes something from irrational motives lacks knowledge. This is a mistake. A person may believe something for the wrong reasons, perhaps he cannot help but do so, and, nevertheless, know that it is true because he assents to it for the right reasons. A person may believe something because the stars or the tarot deck tell him it is so, but in the quest for truth, he may assent to it on proper grounds. The man, then, accepts the proposition as well as believing it to be true, and the reasons for which he accepts it may lead us to conclude that the third and fourth conditions of knowledge are satisfied.

This distinction between belief and acceptance also vitiates those causal theories of knowledge that maintain that whether a person knows something to be true depends on the causal relation between a person believing something and the fact that it is so. Belief may arise in particular and sundry ways, but no matter how a person comes to believe something, and no matter how his belief is sustained, he may know that what he believes is true if he accepts the proposition in question on proper grounds.

Drawing upon an analogy suggested by

Dennett, one might think of relation between belief and acceptance in a way similar to the way one thinks of the relation between desire and choice.<sup>3</sup> A person finds himself with a natural endowment of desires and beliefs at any given moment which he may not be able to alter immediately. But one may refuse to accept what one cannot help but believe just as one may refuse to choose what one cannot help but desire. To borrow from Descartes, it is as though we find ourselves with a basket of apples, some of which we picked and others of which were given to us, and we face the problem of sorting through the collection to decide which ones are good to eat and which are not. We sort through our collection of desires and beliefs to decide which desires should be acted on and which ones not, and we sort through our beliefs to decide which ones should receive our assent and which ones not.

### 3. THE EVIDENT

With these remarks concerning acceptance, let us turn to the question of what is epistemically justified or evident for a person. Whether a proposition is evident for a person depends, I maintain, on how well the proposition fares in conflict with other propositions. Thus, I propose that  $h$  is evident for  $S$  if and only if, for any proposition  $c$  that competes with  $h$  for  $S$ , either  $h$  beats  $c$  for  $S$  or  $c$  is neutralized with respect to  $h$  for  $S$ . To elucidate this definition, we shall have to explicate what it means to say that a proposition competes with, beats, or neutralizes another. I shall take as primitive for this discussion a comparative notion of epistemic reasonableness. Thus, I shall say that one epistemic state is more reasonable than another, for example, that accepting a proposition is more reasonable than accepting another. This is Chisholm's strategy. However, I do this only for convenience. Epistemic reasonableness is epistemic expected utility, and the latter may be explicated in terms of probability and utility.

### 4. COMPETITION

To elucidate the definiens of the definition given above, let us first turn to the notion of a competitor. A proposition need not contradict another to conflict with it. The proposition that I am now undergoing intensive hallucination does not contradict the proposition that I am now seeing a table because one may see objects when one is hallucinating. But the proposition that I am hallucinating in this way competes with the proposition that I am now seeing a table in that the former deprives that latter of epistemic status. If I am now hallucinating, then it is not as reasonable for me to accept that I see a table as it would be if I were not hallucinating. Thus, a competitor of a proposition is one that diminishes the epistemic worth or reasonableness of accepting the proposition. I am certain that I am not now hallucinating, and I am also certain that I see a table before me. Suppose, on the contrary, that I were certain that I *was* now hallucinating. In that case it would be less reasonable for me to accept that I now see a table. It would be by no means certain that I do.

These reflections suggest the following definition of competition:  $c$  competes with  $h$  if and only if it would be less reasonable for  $S$  to accept  $h$  if  $c$  were certain for  $S$  than if the denial of  $c$  were certain for  $S$ . We may here define certainty as Chisholm does and say that  $k$  is certain for  $S$  if and only if it is more reasonable for  $S$  to accept  $k$  than not to, and there is no proposition that it is more reasonable for  $S$  to accept than  $k$ . The certain is the maximally reasonable.<sup>4</sup>

### 5. BEATING AND NEUTRALIZING

We must say what it is for a proposition to be beaten or neutralized. As definitions, I propose that if  $c$  competes with  $h$  for  $S$ , then  $h$  beats  $c$  if and only if it is more reasonable for  $S$  to accept  $h$  than to accept  $c$ , and  $c$  is neutralized with respect to  $h$  for  $S$  if and only if there is some proposition  $n$  such that

the conjunction of  $n$  and  $c$  does not compete with  $h$  for  $S$  and it is as reasonable for  $S$  to accept the conjunction as it is for him to accept just  $c$ .

Let me illustrate the implications of these definitions. For a proposition to be evident for a person, the proposition must meet two kinds of skeptical challenge. The first is one that comes from a skeptic who advances a hypothesis that contradicts what a person claims to know. If a skeptic claims that I am not now seeing but I am asleep and dreaming, I shall reply to him that it is more reasonable for me to accept the proposition that I now see a table than to accept the proposition that he avers to be true. That reply would require defense before the skeptic would be satisfied, but the reply is, as stated, perfectly true. This means that a competitor that the skeptic suggests is beaten by the proposition I claim to know.

A more subtle skeptical challenge might have to be neutralized rather than beaten. For a subtle skeptic might remark, when I claim to know that I now see a table, that people sometimes dream such things. That people sometimes dream such things competes with the proposition that I now see a table, and it is by no means obvious that it is more reasonable for me to accept the latter than the former. This skeptic has challenged my claim to know without contradicting the proposition that I now see a table. He has attempted to defeat my claim to know, not by contradicting the proposition that I now see a table, but by diminishing the claim by innuendo, by reminding me of something that I know to be true which seems to diminish the reasonableness of my claim. What he says is perfectly true, and it does compete with what I aver. How should I reply?

This sort of information cannot be beaten, but it may be neutralized. For, the innuendo is that I am now dreaming. If I am not now dreaming, then the fact that people sometimes dream that they see tables loses its competitive force. The conjunction of the propositions that people sometimes dream they see tables and that I am not now

dreaming does not compete with the proposition that I now see a table. Moreover, it is as reasonable for me to accept the conjunction as it is for me to accept the skeptic's remark alone. So the remark of the skeptic, though not beaten, is neutralized. Many skeptical challenges must be dealt with by neutralization.

A remark here is necessary about my claim that it is as reasonable for me to accept the conjunction as it is for me to accept just the skeptic's claim that people sometimes dream. The skeptic might reply that his claim is more reasonable because it is less likely to be false than the conjunction of his claim and mine. For a conjunction like this one is less probable than a conjunct within it. My answer is that the probability of error is not the only relevant consideration, and the assumption that it is so gives unnecessary succor to the skeptic. For, as truth seekers, we are interested not only in avoiding error, we are also interested in getting hold of truth. The greater the content of a proposition, the more truth we obtain when it is true. Thus, expected epistemic utility or reasonableness of accepting a proposition is a function of our interest in content and our interest in avoiding error. These two objectives must be balanced one against the other. We want to avoid error in the story we tell, but we want to tell the whole story. A conjunction can be no more reasonable to accept than the least reasonable conjunct, but it may be just as reasonable as the least reasonable conjunct. Since it is so improbable that I am now dreaming, the epistemic utility of accepting that I am not together with the skeptical remark outweighs epistemic utility of accepting just the latter. The conjunction is more informative, surely, and the added risk of error is worth taking.

It might appear that the appeal to content would allow a skeptic to concoct an unbeatable competitor for any hypothesis or a dogmatist to fabricate an artificial neutralizer. For, suppose that a skeptic has a competitor  $c$  for  $h$  which is beaten by  $h$ . The skeptic could conjoin to  $c$  a proposition  $p$ , which,

though irrelevant to *h*, is virtually immune from error and highly informative. Then the conjunction of *c* and *p* would compete with *h* and more effectively so, one might think, because the conjunction is so much more informative than the *c* alone. Similarly, a dogmatist trying to find some proposition *n* to neutralize a competitor *c* might conjoin some irrelevant information to a neutralizing proposition attempting to bolster the reasonableness of it. The addition of irrelevant information by either the skeptic or the dogmatist is a sort of smokescreen intended to obscure the relevant weakness of a competitor or neutralizer. However, such a ruse will be ineffective. For, as we noted above, a conjunction can be no more reasonable than the least reasonable conjunct of it just as a chain can be no stronger than the weakest link of it. The light of reason clears the smokescreen when we note that the conjunction of *c* and *p* concocted by the skeptic can be no more reasonable than *c* alone. Hence, if *h* beats *c*, then *h* will also beat the conjunction of *c* and *p* in spite of the informativeness of *p*. Similarly, if the intended neutralizer *n* fabricated by the dogmatist contains a proposition *r* that is relevant to the original competitor *c* but less reasonable than *c*, and another irrelevant but informative proposition *q* that is more reasonable than *c*, the proposition *n* will be no more reasonable than *r*, and, therefore, less reasonable than *c*. A smokescreen of irrelevant information is epistemically impotent.

It is perhaps worth noting that some of the foregoing ideas are relevant to historical epistemological disputes. Thomas Reid claimed that perceptual claims such as that I see that there is a table are certain, indeed, as certain as the more cautious claim that I *think* I see that there is a table.<sup>5</sup> The latter is less likely to be erroneous than the former. So how can the former be as certain as the latter? If we suppose that informativeness is an epistemic virtue, then we may defend Reid by saying that the perceptual claim, that I see that there is a table, though more likely to be in error than the claim that I think that I see that there is a table, is also

more informative, and hence equally reasonable in epistemic terms. The greater content balances the greater risk of error, and the result is maximal reasonableness. This claim may be controverted, but it does show how we may defend claims that propositions are certain or evident even though there is some risk of error in accepting them.

## 6. THE GETTIER PROBLEM: A FOURTH CONDITION

With this discussion of the notion of evidence before us, let us turn to the Gettier problem. The fourth condition I propose is as follows:

- (iv) There is no *f* such that *f* is false and such that if *f* were doubtful for *S*, then *h* would not be evident for *S*.<sup>6</sup>

I use the expression 'doubtful' in a technical sense. It is that *f* is doubtful for *S* if and only if it is more reasonable for *S* to decline *f* than to accept *f*. To say that *S* declines *f* means that he does not accept *f* but leaves open the question of whether he accepts the denial of *f*.

A number of philosophers suggest the following sort of condition, though sometimes in other terms, which I think is defective.

- (ive) There is no *f* such that *f* is false and such that if the falsity of *f* were evident for *S*, then *h* would not be evident for *S*.<sup>7</sup>

One way of explaining the advantage of the condition I propose is to show how it remedies a defect in (ive). There are two problems with (ive) that are paramount. The first concerns misleading evidence, and the second concerns extraneous information.

## 7. MISLEADING EVIDENCE

For an example of misleading evidence, consider the case of Tom Grabit that Paxson and

I proposed.<sup>8</sup> The example is one in which I see Tom Grabit, a student in a very small class of six members, take a book off the shelf in a library, conceal it beneath his coat, and walk out of the library. I know that Tom Grabit took a book out of the library. Now suppose that, quite unknown to me, Mr. Grabit, Tom's father, is just now remarking that Tom Grabit is not in Tucson today (where I am) and that his identical twin John is in Tucson, indeed, at the library. With only this much of the story told, some might doubt whether I really do know that Tom Grabit took a book out of the library. However, Mr. Grabit is entirely demented, talking only to an imaginary person in a room in the mental hospital. There is no brother John, and Mr. Grabit has no information whatever concerning the whereabouts of Tom. Since Mr. Grabit's remarks were heard by no one, they are not testimony in the public domain. Moreover, we may imagine that if anyone were to ask Mr. Grabit where Tom is today he would stare blankly in catatonic silence. The mere coincidental remark of Mr. Grabit about Tom surely fails to show that I do not know that I saw Tom Grabit take a book out of the library.

Let us consider how conditions (iv) and (ive) deal with this case. Let *m* be the proposition that Tom Grabit was not in Tucson today and that his identical twin brother was in town at the library. Mr. Grabit said that *m*. Each condition asks us to evaluate the statement

- (c) It is not evident for me that Tom Grabit took a book from the library,

given a counterfactual assumption. Condition (ive) asks us to consider the assumption equivalent to

- (ae) It is evident for me that Mr. Grabit said that *m*.

While condition (iv) asks us to consider the condition

- (a) It is doubtful for me that Mr. Grabit did not say that *m*,

where the latter means that declining the proposition that Mr. Grabit did not say that *m* is more reasonable than accepting that Mr. Grabit did not say that *m*.

Assumption (a) is one that would already have been fulfilled in the original case. When I see Tom Grabit take the book from the library, I do not know anything about Mr. Grabit, not even that such a person lives. In this circumstance, declining propositions about Mr. Grabit is surely more reasonable than accepting such propositions. I have no information that would make it reasonable for me to accept any proposition about what Mr. Grabit might or might not say. Thus, assuming that it is evident for me that Tom Grabit took the book, which it is, assumption (a) introduces no epistemic alternation. Therefore, condition (iv) is satisfied. My analysis is, therefore, consistent with the correct conclusion that I know that Tom took a book from the library.

But the situation is different with respect to (ae) and condition (ive). For if it were to become evident to me that Mr. Grabit said that Tom was not in Tucson and that his identical twin John was in Tucson at the library, then it would no longer be evident for me that it was Tom who took the book from the library. For, I have no other information about Mr. Grabit. It is as though some completely dependable person told me that Mr. Grabit said what he did and then the informant left without giving any other information about Mr. Grabit. I have no reason to think Mr. Grabit is lying or ignorant or that his remarks are in any way deceptive. In short, I have no way of neutralizing the proposition that Mr. Grabit said that *m* which competes with the proposition that Tom Grabit took the book from the library. If we attempt to neutralize it with the proposition that Mr. Grabit is lying or misinformed, we fail. It is by no means evident that this is so and, by assumption, it is evident that Mr. Grabit said that *m*. Thus (ive) is not satisfied in this case, and the analysis containing it yields the incorrect result that I do not know that Tom took the book.

## 8. EXTRANEOUS INFORMATION

Let us now consider the case of extraneous information. Suppose I am sitting in my office and begin to put away some implements in my office. I put my pen in the middle drawer in my desk, knowing that I do this, and then put the manuscript I was working on in the top drawer of the filing cabinet, knowing that I do this. I would claim to know that my pen is in the middle drawer of my desk and the manuscript is in the top drawer of my filing cabinet. Now imagine that, quite unknown to me, a workman came in to repair my desk, leaving a hole in the back of the drawer so that, unknown to me, the pen slipped into the opening and fell out of the drawer. I do not know that the pen is in the middle drawer of my desk because it is not there. I do know that my manuscript is in the top drawer of my filing cabinet, having placed it there.

Condition (ive) yields the incorrect result that I do not know that the manuscript is in the top drawer of my filing cabinet, while condition (iv) yields the correct result that I do know this. Consider the conjunctive proposition,  $k$ , that my fountain pen is in the middle drawer of my desk and my manuscript is in the top drawer of the filing cabinet. That conjunction is false because the proposition about the pen is false. Consider the following two assumptions to evaluate (ive) and (iv) respectively:

- (ae) It is evident for me that it is false that  $k$ .
- (a) It is doubtful for me that  $k$ .

The question is whether we would conclude from these assumptions that

- (c) It is not evident for me that my manuscript is in the top drawer of my filing cabinet.

Now (ae) amounts to the assumption that it is evident for me that either the pen is not in the middle drawer of the desk or the manuscript is not in the top drawer of the filing cabinet. That proposition competes

with the proposition that my manuscript is in the top drawer of my filing cabinet. Can it be neutralized? One way to neutralize it would be with the proposition that my pen is not in the middle drawer of my desk. But I have no way, from the evidence I possess, of deciding whether I am wrong about the whereabouts of the pen or the manuscript. Consequently, I cannot reason from my evidence that my manuscript is in the top drawer of my filing cabinet.

Now consider assumption (a). Here we are required to assume that declining  $k$  is more reasonable than accepting  $k$ . We are not required to assume that it is *evident* that  $k$  is false. Since the proposition that  $k$  is false is not evident on this assumption, I may reason that the proposition that my manuscript is in the top drawer of the filing cabinet [is true] because I put it there. The assumption that declining  $k$  is more reasonable than accepting  $k$  does not render it evident or even reasonable to suppose that  $k$  is false. Hence, the denial of  $k$ , which competes with the proposition that my manuscript is in the top drawer of the filing cabinet, is easy enough to neutralize. The proposition that I put my manuscript in the top drawer of the filing cabinet will neutralize the denial of  $k$ . The conjunction of that proposition and the denial of  $k$  is surely as reasonable to accept as the denial of  $k$  alone.

Perhaps a less technical way of representing the difference between (ive) and (iv) would be helpful. To that end, imagine that some completely reliable person tells me after examining the two drawers in question that conjunction  $k$  is false. That would make it evident for me that I was wrong about either the location of the pen or manuscript. It would not, then, be evident for me that the manuscript is in the top drawer of the filing cabinet. This result corresponds to condition (ive). Imagine now that the man who tells me this often enjoys fooling me on such matters and I cannot ever tell when he is deceiving me. Declining the conjunction is more reasonable than accepting it, but it might remain evident for me that the manuscript is in the top drawer of the filing cabi-



net. I put it there, after all. This result corresponds to condition (iv).

## 9. GETTIER COUNTEREXAMPLES

Having argued that condition (iv) allows us to say that we know when we do know, does it rule out typical Gettier counterexamples? Take the case in which I have strong evidence that Nogot, who is in my class, owns a Ford, no evidence that anyone else does, but Havit, who is also in my class, owns a Ford, quite unknown to me, and Nogot does not. I do not know that someone in my class owns a Ford. Condition (iv) asks us to consider the assumption that declining the proposition that Mr. Nogot owns a Ford is more reasonable than accepting that Mr. Nogot owns a Ford. This has the effect of blocking my reasoning from the evidence for Nogot owning a Ford to the conclusion that someone in my class owns a Ford. We have evidence that seems to make it evident that Mr. Nogot owns a Ford. We have his testimony, seen him drive the car, examined documents, and so forth. But in spite of that we must assume that it is more reasonable to decline the proposition that Nogot owns a Ford than to accept that proposition. This can only mean that evidence is in some way deceptive. Otherwise it would be evident for me that Nogot owns a Ford.

The proposition that evidence we have that Nogot owns a Ford is deceptive competes with the proposition that someone in the room owns a Ford. Moreover, it cannot be neutralized. That Nogot owns a Ford anyway is not as reasonable for me to accept given our assumption as the proposition that my evidence about Nogot owning a Ford is deceptive. Thus, the proposition that Nogot owns a Ford, when taken in conjunction with the proposition that my evidence about Nogot owning a Ford is deceptive, is not as reasonable for me to accept as the simple proposition about the evidence being deceptive. In short, given our assumption, it is very reasonable for me to accept that my evidence is deceptive. Because it is so reasonable to accept that, potential neutralizers of that

proposition fail. Condition (iv) is not satisfied and this explains why I do not know that someone in my class owns a Ford.

A slight modification of this counterexample reveals the superiority of condition (iv) to other methods for dealing with the Gettier problem. Other solutions depend on the assumption that the proposition that someone in my class owns a Ford is *inferred* from the proposition that Nogot owns a Ford or that I *believe* that Nogot owns a Ford.<sup>9</sup> These solutions require that justification not be based essentially on any false belief or lemma of inference. However, we can modify the example so that no false lemma or belief is involved. Suppose that in the previous example I am asked whether I know that there is a Ford owner in my class. I claim that I do know this. It is then suggested to me that I claim to know this because I believe that Nogot owns a Ford or because I inferred my conclusion from that premise. But I demur. I point out that, though I do have excellent evidence that Nogot owns a Ford, I have not been asked whether I know that *he* owns a Ford, and so there is no need for me to take a stand on that issue. For, I note, even though my primary evidence for claiming to know that there is a Ford owner in my class is the evidence I have concerning Nogot, there are many other members of the class, and, if by some odd quirk it should turn out that Nogot does not own a Ford, someone else in the class might own one. Thus, even if the proposition that Nogot owns a Ford should happen to be false, I might still be correct in claiming that someone in my class owns a Ford. So I choose to decline the proposition that Nogot owns a Ford, in order to guard against the remote chance of being in error there. I need not commit myself on that proposition in order to claim that *someone* in my class owns a Ford. My inference proceeds directly from my evidence, which consists of propositions I know to be true. This is, in fact, the reply that Gettier gave to Harman when the latter claimed that the problem can be solved by requiring that the inference to a conclusion not involve a false lemma.<sup>10</sup>



The method for dealing with the original Nogot example based on condition (iv) works equally well for the modified example. The proposition that Nogot owns a Ford is false whether or not it is believed or is a lemma of inference. Since it is false, we must ask whether the proposition that someone in my class owns a Ford remains evident for me on the assumption that it is doubtful for me that Nogot owns a Ford. If that is doubtful, then, again, my evidence must be deceptive, because the evidence I have for that proposition would, if not deceptive, render it evident and not at all doubtful. Then, as before, the proposition that my evidence is doubtful cannot be beaten or neutralized. Again, (iv) is not satisfied.

It is worth noting in passing that condition (iv) is not so strong that it yields the result that a person lacks knowledge when there is a good inferential chain as well as a defective inferential chain to a conclusion. Thus, if the situation concerning Nogot is as before, I have good evidence he owns a Ford, though he does not, but I also *know* that Havit, who is also in my class owns a Ford, it will turn out that I know that someone in my class owns a Ford. We shall have to consider the consequences of declining on the proposition that both Nogot and Havit own Fords, for that proposition is false. But that does not block me from reasoning from the evidence that I have that Havit owns a Ford to the conclusion that he owns a Ford. On the assumption that it is doubtful that they both own Fords, I must concede that the evidence that they *both* own Fords is deceptive, but I need not concede that the evidence that I have that Havit owns a Ford is deceptive.

While considering modifications of the original Nogot example, I should also like to make it clear that a very simple modification of that example suffices to defeat attempts to deal with the Gettier problem in causal terms, for example, by requiring the fact that makes a proposition a person believes true be a cause of his believing it. For, it may well have occurred to some readers of the original Nogot example to wonder why No-

got should have gone to so much trouble to deceive me into believing that he owned a Ford when he did not. The answer, we may suppose, is that Nogot knows that Havit owns a Ford, and Nogot has a compulsion to try to trick people into believing true propositions by getting them to believe some false propositions. Thus, the fact that someone in my class owned a Ford caused Nogot to cause me to believe that someone in my class owned a Ford. So the fact that someone in my class owned a Ford is, indirectly, the cause of my believing that someone in my class owns a Ford. But this is still not anything I know. Moreover, the deception need not involve a human agent but might arise from some peculiarity in the natural cause of events, like a name fading in a peculiar way on a document.

There are two other cases that might profitably be considered here. One is the Chisholm example in which a man who usually knows a sheep when he sees one, looks out into a field, sees a rock which looks very much like a sheep, and, consequently, takes the rock to be a sheep.<sup>11</sup> Let us suppose that the rock looks so much like a sheep that it is evident for him that there is a sheep in the field. Moreover, let us suppose that there is, in fact, a sheep in the field, though he does not notice this sheep. It is false that what appears to him to be a sheep is a sheep. So, by condition (iv) we consider the assumption that it is doubtful for him that what appears to him to be a sheep is a sheep. If that is doubtful for him, then appearances are misleading. The way the object appears is misleading in some way, and the proposition that it is misleading in some way cannot be beaten or neutralized. Therefore, on the assumption in question, it is not evident for the person that there is a sheep in the field. Hence, by (iv) the person does not know that there is.

Another, rather difficult, example from Skyrms, concerns the man who is striking a Sure-Fire match, a kind of match that has always lighted before when struck.<sup>12</sup> However, we are supposed to imagine that the person who has witnessed the perfect regu-

larity with which Sure-Fire matches have lighted when struck has no causal hypothesis about the relation between striking and lighting. He proceeds according to the Newtonian directive of hypotheses *non fingo*. He infers from the past correlation that the present match he is about to strike will light, but without any causal assumption. The match does light, but in fact it is a defective match which only lights because some Q-radiation raises the temperature of the match. Why does he not know the present match will light if struck?

Again, this case can be dealt with in the manner of the modified Nogot case. Our condition does not require that a person believe or infer anything from a false proposition for the falsity of that proposition to be relevant to whether the person knows. In this case, the false proposition is that the present match is in as good a condition for lighting when struck under similar circumstances as the previously observed matches. This proposition is false. Thus we must consider the consequences of assuming that it is doubtful. If it is doubtful that the match is in as good a condition for lighting when struck under similar circumstances as the previously observed Sure-Fire matches, then the evidence of the previous lighting of the other Sure-Fire matches fails to make it evident that the present match will light. Again the reasonableness of declining the proposition blocks the chain of inference from the evidence to the conclusion that the match will light. If it is more reasonable to decline than accept the proposition that the match is in as good a condition for lighting when struck under similar circumstances as the previously observed Sure-Fire matches, then it is very reasonable to accept that the evidence from previous matches may be misleading. There is no way that this proposition can be neutralized, and it competes with the proposition that the present match will light if struck. The proposition is, therefore, not evident for the man. Condition (iv) is not satisfied, and he does not know the proposition is true.

In summary, the fourth condition I have

proposed requires that for a person to know something it must remain evident for him when any false proposition is assumed to be doubtful for him. This does not require that he assume that it is evident for him that the proposition is false. Moreover, the condition does not depend on the person believing or inferring anything from the false propositions that deprive him of knowledge. The false propositions, when assumed to be doubtful, block the transmission of justification from false propositions to true ones. In that way our analysis provides a fallibilistic theory of epistemic justification.

## NOTES

1. Gettier, Edmund L., "Is Justified True Belief Knowledge?" *Analysis*, 23, 6 (1963), 121-123 [Pp. 4-5 in this volume. Ed.] Articles on the problem are collected in Roth, Michael D., and Leon Galis, eds., *Knowing: Essays in the Analysis of Knowledge*, New York: Random House, 1970. Also see the bibliography in Pappas, George S., and Swain, Marshall, eds., *Essays on Knowledge and Justification*, Ithaca: Cornell, 1978, 370-374.
2. Chisholm, Roderick M., *Theory of Knowledge*, Englewood Cliffs: Prentice-Hall, 1977. [Pp. 53-69 in this volume. Ed.] Note that in the foregoing definitions time references are not made explicit, but all definitions and conditions are assumed to be relativized to some specific time.
3. Daniel Dennett formulated this idea at a Chapel Hill symposium, 1977.
4. Chisholm, *op. cit.*, 10.
5. Reid, Thomas, *Essays on the Intellectual Powers of Man*, 1785, Essay II, Chapter 20.
6. The subjunctive conditional 'if *f* were doubtful for S, then *h* would not be evident for S' imbedded in (iv) may be eliminated in terms of current possible worlds analyses of such conditionals provided that consideration of possible worlds is restricted to those in which *f* is doubtful for S in a way that is the least unfavorable to *h* being evident for S.
7. Cf. Hilpinen, Risto, "Knowledge and Justification," *Ajatus*, 33, 1 (1971), 7-39, and Klein, Peter D., "A Proposed Definition of Propositional Knowledge," *Journal of Philosophy*, 68, 16 (1971), 471-482.
8. Lehrer, Keith and Paxson, Thomas, Jr., "Knowledge: Undeclared Justified True Belief," *Journal of Philosophy*, 66, 8 (1969), 225-237.
9. A solution depending on inference is proposed in Harman, Gilbert, *Thought*, Princeton: Princeton University Press, 1973, and one depending on belief in Lehrer, Keith, *Knowledge*, New York: Oxford University Press, 1974.

10 Gettier was replying to Harman at a symposium of the American Philosophical Association, Eastern Division, 1970.

11 Chisholm, *op. cit.*, 105.

12 Skyrms, Brian, "The Explication of 'X knows that *p*,'" *Journal of Philosophy*, 64 12 (1967), 373-389.

## Knowledge

### ROBERT NOZICK

#### CONDITIONS FOR KNOWLEDGE

Our task is to formulate further conditions to go alongside

- (1) *p* is true
- (2) S believes that *p*.

We would like each condition to be necessary for knowledge, so any case that fails to satisfy it will not be an instance of knowledge. Furthermore, we would like the conditions to be jointly sufficient for knowledge, so any case that satisfies all of them will be an instance of knowledge. We first shall formulate conditions that seem to handle ordinary cases correctly, classifying as knowledge cases which are knowledge, and as nonknowledge cases which are not; then we shall check to see how these conditions handle some difficult cases discussed in the literature.<sup>1</sup>

The casual condition on knowledge, previously mentioned, provides an inhospitable environment for mathematical and ethical knowledge; also there are well-known difficulties in specifying the type of casual connection. If someone floating in a tank oblivious to everything around him is given (by direct electrical and chemical stimulation of the brain) the belief that he is floating in

a tank with his brain being stimulated, then even though that fact is part of the cause of his belief, still he does not know that it is true.

Let us consider a different third condition:

- (3) If *p* weren't true, S wouldn't believe that *p*.

Throughout this work, let us write the subjunctive 'if-then' by an arrow, and the negation of a sentence by prefacing "not-" to it. The above condition thus is rewritten as:

- (3) not-*p* → not-(S believes that *p*).

This subjunctive condition is not unrelated to the causal condition. Often when the fact that *p* (partially) causes someone to believe that *p*, the fact also will be causally necessary for his having the belief—without the cause, the effect would not occur. In that case, the subjunctive condition 3 also will be satisfied. Yet this condition is not equivalent to the causal condition. For the causal condition will be satisfied in cases of causal overdetermination, where either two sufficient causes of the effect actually operate, or a back-up cause (of the same effect) would operate if the first one didn't; whereas the subjunctive condition need not hold for these cases.<sup>2</sup> When the two conditions do agree, causality indicates knowledge because it acts in a manner that makes the subjunctive 3 true.